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XXX. *Account of an extraordinary Pheasant.*

By Mr. John Hunter, F.R.S.

Read June 1, 1780.

EVERY deviation from that original form and structure which gives the distinguishing character to the productions of nature may not improperly be called monstrous. According to this acceptation of the term, the variety of monsters will be found to be infinite. As far as my knowledge has extended, there is not a single species of animal, nay there is not a single part of an animal body, which is not subject to extraordinary formation. Nor does this appear to be a matter of mere chance; for it may be observed, that each animal has a disposition to deviate from nature in a manner peculiar to itself. It is likewise worthy of remark, that each species of animal is disposed to have the same kinds of supernumerary parts, and nearly the same kinds of defects; but every part is not, perhaps, subject to a great variety of forms, each part of each species having its monstrous form,

form, as it were, originally impressed on it by the hand of nature.

It is well known, that there are many orders of animals which have the two parts, designed for the purpose of generation, different in the same species, and which are thus divided into male and female: but this is not the only distinguishing mark in many genera of animals; in the greatest part of animals, the male being distinguished from the female by various marks.

A lion is different from a lioness; a cock from a hen, &c.; particularly the voice in many animals of the same genus is different: such I shall call secondary properties, which take place only in parts that are neither essential to life nor generation, and which do not take place till towards the age of maturity. However, this distinction of sexes, by any other marks than the difference of the parts of generation, is not observable in every order of animals; for instance, there is very little difference between a dog and a bitch, exclusive of the parts of generation.

In those orders of animals, which are composed of distinct sexes, we may observe, the genital organs not only subject to a mal-conformation, similar to a mal-conformation in any other part of the animal; but we may likewise sometimes observe an attempt to unite the

two parts in one animal body, producing an animal called an unnatural hermaphrodite^(a).

It is my intention at present to extend my inquiry on this subject no farther than as to what relates to that resemblance which one sex bears to that of another in those distinguishing properties which I term secondary.

The common class of unnatural hermaphrodites appear to be governed by certain laws, by which such an extraordinary formation of parts is effected; for it is observable, that these deviations obtain through whole species of animals precisely in the same manner. I have given an account of the Free-martin in a paper already presented to this Society. This hermaphrodite exhibits a mixture of the two parts of generation in the same animal.

But we find, however, that there is often a change of the secondary properties of one sex into another, the female now and then assuming the peculiarities of the male with respect to the secondary properties; and I may observe, that some classes are more subject to this than others; a singular example of which is to be the subject of the following paper.

Here I beg leave to premise, that in all animals of no distinct sex, there is no alteration taking place in their

(a) *Vide Phil. Trans. vol. LXIX. part I.*

form when at the age of maturity, which I have observed not to be the case with most of those animals which are of distinct sexes, for in such the secondary marks of distinction are exhibited at certain periods of life.

There is no sex of any animal whatever that has any peculiarity in shape when born, or when young; but most of those animals, which are of distinct sexes, have peculiarities towards the age of maturity. The male at this time loses that resemblance which he before bore to the female in various secondary properties, exclusive of what relates to the organs of generation^(b). That it is the male who at this time recedes from the female in this respect is evident. Every female, just at the age of maturity, is more like the young of the same species than the male is observed to be; and if the male is deprived of his testes when young, he retains more of the original form, and therefore is more similar to the female.

From hence it might be supposed, that the female character contains more truly the specific properties of the animal than the male; but the true character of every animal is that which is in both sexes, *viz.* a natural hermaphrodite, or an animal of neither sex, *viz.* a

(b) This is not common to all animals of distinct sexes; for in the fish there is no great difference, nor in many insects, nor in dogs, as has been already observed; it appears to be most so in birds.

castrated male or spayed female. Of the first we may instance the snail, which is of both sexes, and has but one character, but that of the joint character of both sexes.

But where the sexes are separate, and in species which have two characters, neither of them can be called the true one; the true distinguishing properties being those peculiar to neither sex, which are found in the castrated male, the spayed female, or the monstrous hermaphrodite. That this is the distinct character of such animals is evident, for the castrated male and the spayed female have but one set of properties between them; and when I treated of the Free-martin, which is a monstrous hermaphrodite, I observed, that it was more like the ox than the cow or bull, so that the double sex which contains the true character of every animal is imitated when made of no sex by art, and by that means gives us the true properties of the species.

In the Free-martin the character arises from a mixture of sexes; but in some animals, which have secondary principles peculiar to the two sexes, we have a deviation from all those general rules. We have in some a change of those secondary characters, the perfect female with respect to the parts of generation, assuming more or less of the secondary character of the male.

This, however, does not appear to be a principle the action of which takes place at the first formation of the animal, so as to grow up with it, but appears to be one of those actions which take place, perhaps, at certain periods of life, similar to many common and natural phenomena; like to what is observed of the horns of the stag, which differ at different ages; or to the mane of the lion, which does not grow till after his fifth year, &c.

This change has been observed in some of the bird tribe, but principally in the common pheasant.

It is remarked by those who are conversant with this bird, when wild, that there appears every now and then a hen pheasant with the feathers of the cock; and all that they have decided on this subject is, that this animal does not breed, and that its spurs do not grow. Some years ago one of these was sent to Dr. HUNTER, who gave me leave to examine it. I found, upon examination, that it had all the parts of the female peculiar to that bird. This specimen is still preserved in Dr. HUNTER's Museum.

Dr. PITCAIRN, having lately received a pheasant of this kind from Sir THOMAS HARRIS, exhibited it as a curiosity to Mr. BANKS and Dr. SOLANDER. I happened to be then present, and was desired to examine the bird. The following is the result of my examination.

I found

I found the parts of generation to be truly female: they were as perfect as in any hen pheasant that is not in the least prepared for laying eggs. There were both the ovaria and the ovi-duct.

As these observations have hitherto been principally made upon birds that are wild, little more can be known of them; but from what happened to a hen pheasant belonging to a lady well known to the President, it should seem probable, that this character originates from a change at a late period of the animal's life, and does not originally grow up with it. This lady for some time had bred pheasants, and had paid particular attention to them. One of her hens, after having produced several broods, moulted, and the succeeding feathers were those of a cock. This animal was never afterwarde impregnated. Hence it is most probable, that all those hen pheasants which are found wild, and have the feathers of the cock, were formerly perfect hens, but that they are now changed by age, and perhaps by certain constitutional circumstances.

This change of feather in hen pheasants, although perhaps more common in them than in any other bird, yet is not absolutely peculiar to them; for we have a well attested instance of the same phenomenon in a pea-

hen, nearly under the same circumstances as have been above described.

Lady TYNTE had a favourite pyed pea-hen, which had produced chickens eight several times; having moulted when she was about eleven years old, she astonished the lady and her family by the feathers peculiar to the other sex, and appearing like a pyed peacock. In this process the tail, which was similar to that of a cock, first appeared after moult. In the following year, she moulted again, and produced the same feathers. In the third year she did the same: at the same time she had spurs similar to those of a cock. She died in the following winter during the hard frost, namely, in the winter 177 $\frac{1}{2}$. She never bred after this change in her plumage. This bird is now preserved in the Museum of Sir ASHTON LEVER^(b).

From what has been related of these two birds, may it not reasonably be inferred, that it seems probable, that all those wild pheasants of the female sex, which are

(b) It might be supposed, that this bird was really a cock which had been changed for a hen; but the following facts put this matter beyond a doubt. First, there was no other pyed pea-fowl in the country. Secondly, the hen had knobs on her toes, which were the same after her change. Thirdly, she was as small after the change as before, therefore too small for a cock. Fourthly, she was a favourite bird, and was generally fed by the lady, and used to come for her meat, which she still continued to do after the change in the feathers.

found

found with the feathers of the cock, had changed the nature of their feathers, particularly at a certain age?

If this idea be just, it shews, that there is a disposition in the female to come nearer and nearer to the male, at least in the secondary properties; or it may rather be said, that the female is later in producing this change than the male is; for it has already been observed, that both sexes when young differ not from each other in these respects, but that the male appears to be the one that by degrees separates itself from the female in its secondary properties.

